

Stemodia anisata A.R.Bean (Plantaginaceae), a new species from Queensland and the Northern Territory

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Summary

Bean, A.R. (2018). *Stemodia anisata* A.R.Bean (Plantaginaceae), a new species from Queensland and the Northern Territory. *Austrobaileya* 10(2): 242–246. *Stemodia anisata* A.R.Bean is described, illustrated and compared to related taxa. A key to the *Stemodia* species occurring in Queensland is provided.

Key Words: Plantaginaceae, *Stemodia*, *Stemodia anisata*, Australia flora, Northern Territory flora, Queensland flora, taxonomy, new species, identification key

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Introduction

The genus *Stemodia* L. is distributed in both the New and Old world, with an estimated total number of 49 species (Turner & Cowan 1993). Some Australian members of the genus were formerly included in the genus *Morgania* R.Br. (Bentham 1869). Barker (1981) foreshadowed the formal transfer of *Morgania*, and later made the necessary combinations in *Stemodia* (Barker 1990), stating that both groups of species have the same fruit dehiscence, and that the Australian species show no correlated differences from their congeners in the Americas.

The taxonomy of the Australian *Stemodia* species is difficult, as many of the species are morphologically similar, and variation within them means that consistent differences are sometimes hard to find. A thorough examination of all available Queensland *Stemodia* specimens has revealed the presence of a new and distinctive species recently collected from the far western part of the state that also extends into the adjacent Northern Territory. It is described here. A key to the identification of all Queensland *Stemodia* species is also included.

Materials and methods

This study is based on a morphological examination of specimens held at BRI, and photographic images of specimens held at DNA. The measurements for corolla, stamens and style are based on material reconstituted with hot water; other plant parts were measured from dried material. The distribution map was compiled using DIVA-GIS Version 7.5.0 (<http://www.diva-gis.org>), from localities or geocodes given on the labels of specimens at BRI and DNA.

Taxonomy

***Stemodia anisata* A.R.Bean sp. nov.** with affinity to *S. glabella* W.R.Barker, but differing by the prostrate habit, the densely hairy obovate leaves, the relatively long hairs on the pedicels and sepals, and the black non-papillose seeds. **Typus:** Queensland. BURKE DISTRICT: Ardmore Station, S of Mount Isa, 25 July 2004, R. Booth 3572 & D. Kelman (holo: BRI [1 sheet]; iso: CANB, DNA, NSW, NY, *distribuendi*).

Prostrate shrub to 10 cm high and 80 cm diameter with woody stems, branches not rooting at the nodes. Indumentum on branchlets of spreading, eglandular hairs, 0.2–0.5 mm long. Leaves opposite, ± sessile, obovate, chartaceous, 8–25 mm long, 2.4–6.2 mm wide, 2.4–4 times longer than broad; midvein readily seen, but no other veins

visible, both surfaces densely hairy with white eglandular spreading hairs, and with numerous sessile yellow glands; margins entire or with a few obscure teeth; apex obtuse. Flowers solitary in leaf axils; pedicel 10–24 mm long at anthesis, shorter before anthesis, longer at fruiting stage, with a mixture of glandular and eglandular hairs. Bracteoles 2, opposite to sub-opposite, positioned at distal end of pedicel, linear to narrowly deltate, 1.1–1.9 mm long, 0.3–0.6 times as long as sepals. Sepals 5, equal, narrowly-deltate, 3.1–4.1 mm long, with many glandular hairs and some eglandular hairs throughout. Corolla 11–14 mm long, fused for most of its length, 2-lipped, the lower lip with 3 obtuse lobes 3–4.5 mm long, purple or mauve; the upper lip with 2 mostly fused lobes, 2–3.5 mm long, purple; corolla tube 6.5–9 mm long, inner surface pale yellow, with very sparse hispid eglandular hairs; outer surface pale yellow to brown, with very sparse glandular and eglandular hairs. Stamens 4, all fertile, epipetalous, didynamous; anthers 2-celled, 0.9–1.1 mm long, white; outer filaments 2.5–3 mm long, inner filaments 4–4.5 mm long. Ovary 2-locular, stigma a broad flap, glabrous. Capsule included in the persistent calyx, narrowly-ovoid, 3.7–4.5 mm long, splitting loculicidally; seeds ellipsoidal, 0.2–0.3 mm long, black; surface lacunose, without papillae. **Figs. 1 & 2.**

Additional specimens examined: Northern Territory. Georgina Downs Station, 5 km NNW of no. 8 bore, Aug 2001, Risler & Duguid 986 (DNA); 7 km WSW of no. 3 bore, Manners Creek Station, Mar 1995, Albrecht 6319 & Latz (DNA). Queensland. GREGORY NORTH DISTRICT: 2 km NNW of Cravens Peak homestead, on road to Sand Hill bore, Apr 2007, Thomas 3421 & Turpin (BRI); Ethabuka, Simpson Desert interdune swale near Field River, Aug 2011, Nicholson cjmEthabuka12 (BRI); Ethabuka Station, 7.8 km N of homestead, Jun 2011, Gillen JSG7b (AD, BRI); Ethabuka Station, c. 375 km SSW of Mt Isa, near border with Northern Territory, Aug 2010, Kemp JEK11756 & Radford (BRI); Ethabuka campground, c. 3 km S of homestead, 112 km NW of Bedourie, Jun 2010, Halford QM64 & Forster (BRI, DNA, MEL); 25 km W of Ethabuka homestead, 10 km S of Field River Road, Aug 2011, Silcock JLS961 (BRI).

Distribution and habitat: *Stemodia anisata* occurs in far western Queensland, from Mount Isa to Ethabuka Nature Refuge, and the

immediately adjacent parts of the Northern Territory (**Map 1**). It inhabits seasonally inundated low-lying areas, either treeless or with scattered *Eucalyptus coolabah* Blakely & Jacobs, gidgee (*Acacia georginae* F.M.Bailey or *A. cambagei* R.T.Baker), or *A. chisholmii* F.M.Bailey. The soils are sandy, at least near the surface.

Phenology: Flowers have been recorded from April to August; fruits from June to August.

Affinities: *Stemodia anisata* resembles *S. glabella* in its corolla size, short bracteoles and long pedicels; however, the former differs by the prostrate habit, hairy branchlets, obovate leaves (versus linear for *S. glabella*), the relatively long hairs on the pedicel and calyx, and black, non-papillose seeds (versus yellow to brown, papillose for *S. glabella*). It differs from *S. tephropelina* W.R.Barker by the prostrate habit (erect for *S. tephropelina*), the lack of glandular hairs on the branchlets (glandular hairs moderately dense for *S. tephropelina*), the entire leaf margins (serrate for *S. tephropelina*), the pedicel 10–24 mm long (1–10 mm long for *S. tephropelina*) and the lacunose seeds without papillae (minutely papillose for *S. tephropelina*).

Notes: The two specimens cited from the Northern Territory (above) have the name *Stemodia* sp. Manners Creek. The voucher specimen for the phrase name ‘*Stemodia* sp. Manners Creek (T.S.Henshall 1779) NT Herbarium’, is present at AD and NT. Bill Barker has identified the AD duplicate as *Elacholoma prostrata* (Benth.) W.R.Barker & Beardsley, syn. *Mimulus prostratus* Benth. (AVH 2018). The NT specimen is also thought to be *Elacholoma* (P. Jobson pers. comm., Jun 2017).

An image of *Stemodia* sp. Tanami (P.K. Latz 8218) on the Flora NT website (Northern Territory Herbarium 2015) shows an upright plant with small lanceolate leaves, very short pedicels, and strongly two-lipped flowers with a narrow throat. All of these features are quite unlike *S. anisata*.

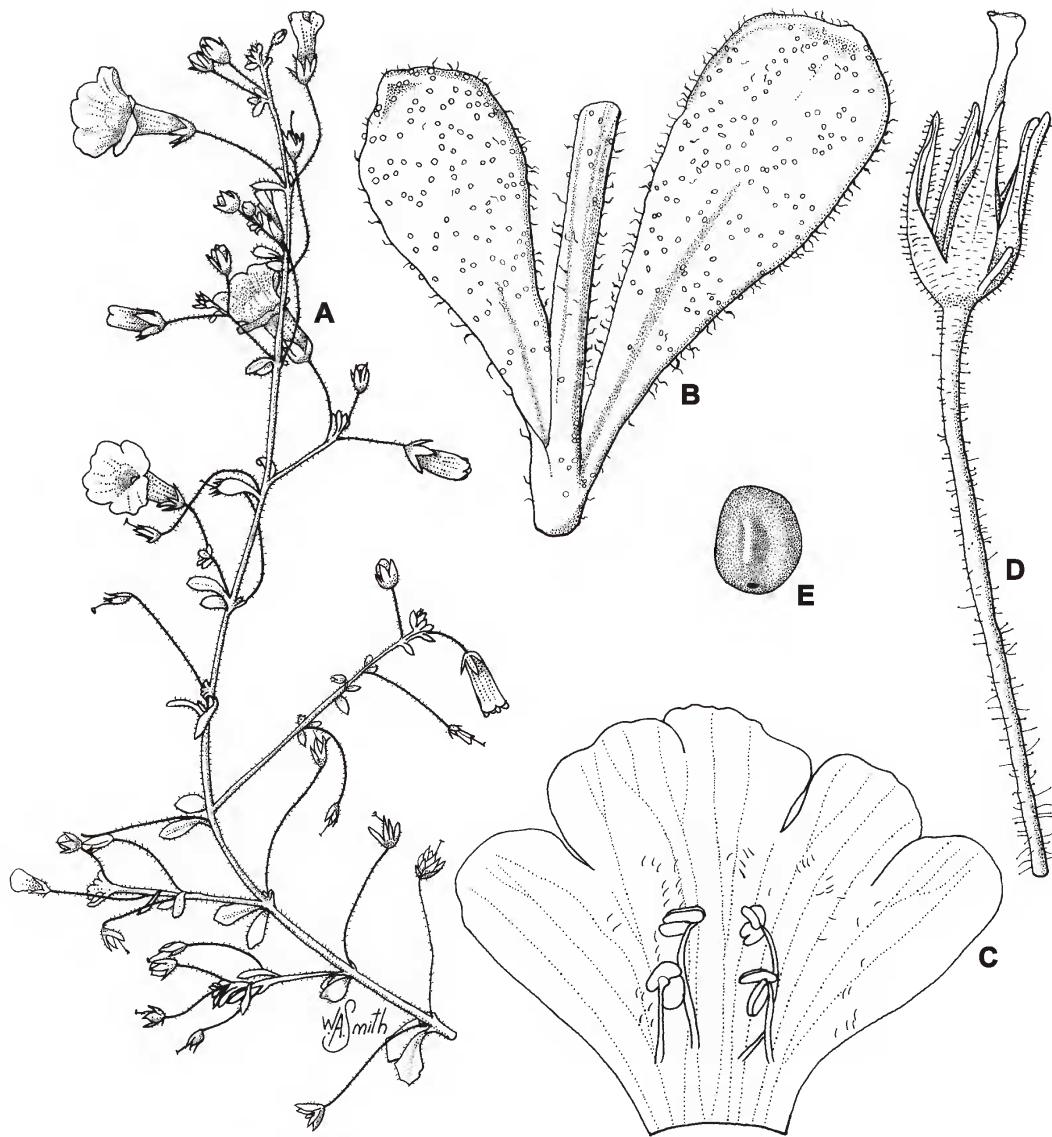


Fig. 1. *Stemodia anisata*. A. flowering branchlet $\times 1$. B. a pair of leaves $\times 6$. C. corolla and stamens $\times 4$. D. old flower (the corolla shed) showing pedicel, calyx, ovary and style $\times 6$. E. seed $\times 50$. All from Booth 3572 & Kelman (BRI, holotype). Del. W. Smith.

Conservation status: Least Concern. The geographical north-south range of the species is around 400 kilometres, and as the area is poorly known botanically, it is likely that many more populations exist. No substantial threats to the species are known.

Etymology: The Latin epithet *anisata* refers to the aniseed aroma of the crushed leaves, mentioned independently by two collectors.



Fig. 2. Young plant of *Stemodia anisata* (Booth 3572 & Kelman). Photo: D. Kelman.

Key to the Queensland species of *Stemodia*

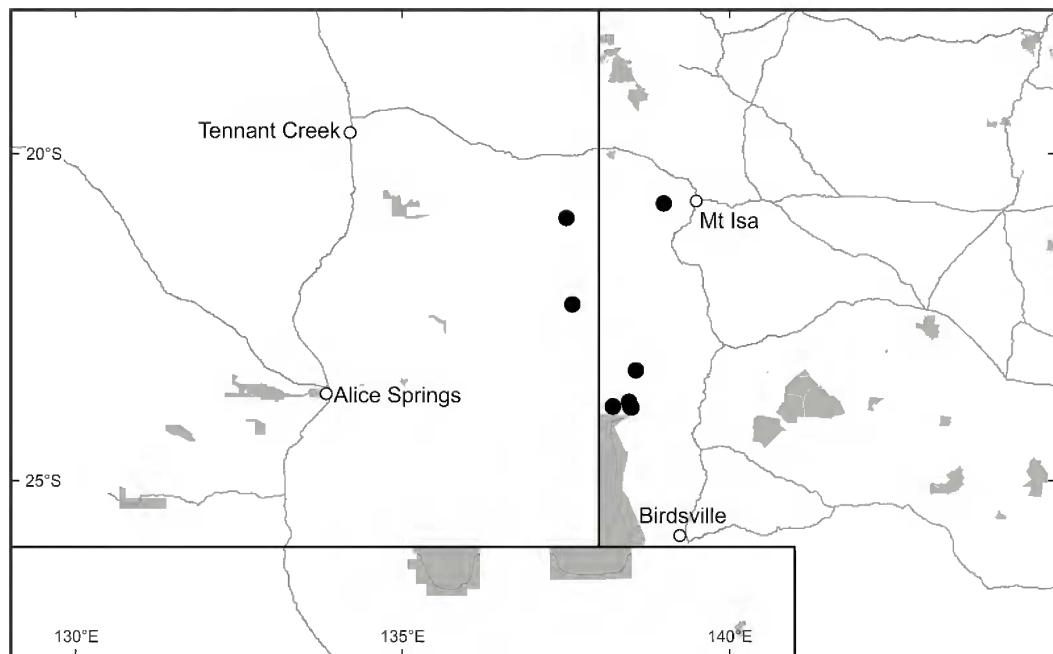
- 1 Inflorescence/infructescence spicate with more than 10 sessile flowers/ fruits ***S. lythrifolia***
1. Inflorescence/infructescence with 1–3-pedicellate flowers/fruit in leaf axil **2**
- 2 Some leaf axils with 2 or 3 flowers/fruit, some leaf axils with a single flower ***S. florulenta***
2. Flowers always solitary **3**
- 3 Bracteoles 0.7–1.4 times as long as sepals, and about as wide as sepals **4**
3. Bracteoles 0.3–0.6 times as long as sepals, and considerably narrower than sepals **5**
- 4 Pedicels 7–29 mm long at anthesis; leaves in whorls of three; corolla 11–16 mm long; bracteoles 0.9–1.4 times as long as sepals ***S. viscosa***
4. Pedicels 0.5–3 mm long at anthesis; leaves opposite; corolla 9–11 mm long; bracteoles 0.7–0.9 times as long as sepals ***S. pubescens***
- 5 Prostrate forb; leaves obovate, 2.4–4 times longer than wide ***S. anisata***
5. Erect forbs; leaves linear, 8–27 times longer than wide **6**
- 6 Corolla 6–9 mm long; sepals with long glandular hairs ***S. lathraia***
6. Corolla 11–16 mm long; sepals with short glandular hairs or glabrous ***S. glabella***

Acknowledgements

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Map 1. Distribution of *Stemodia anisata*.